

CLAIMS:

1. An optical receiver comprising:

a dispersion compensator having variable amount of dispersion compensation to compensate chromatic dispersion of  
5 a signal light input from an optical transmission line;

a selfcorrelator to operate selfcorrelation of a signal light output from the dispersion compensator; and

a controller to control the dispersion compensator to make the selfcorrelation of the optical selfcorrelator larger.

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2. The optical receiver of claim 1 further comprising a transmission error rate information calculator to calculate information indicating a transmission error rate of the optical transmission line out of the signal light output from the  
15 dispersion compensator wherein

the controller controls the dispersion compensator to make the transmission error rate smaller.

20 3. The optical receiver of claim 2 wherein the controller controls the dispersion compensator to make the selfcorrelation of the optical selfcorrelator larger and after that controls the dispersion compensator to make the transmission error rate smaller according to the output from the transmission error rate information calculator.

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4. The optical receiver of claim 2 wherein the dispersion compensator comprises a dispersion/dispersion slope compensator having variable amount of dispersion compensation and variable dispersion slope; and

30 the controller controls the amount of dispersion compensation of the dispersion/dispersion slope compensator so that the selfcorrelation of the optical selfcorrelator becomes larger and controls the dispersion slope of the

dispersion/dispersion slope compensator so that the transmission error rate becomes smaller.

5. An optical receiver comprising:

5 an optical divider to divide a signal light from an optical transmission line into two portions;

first and second dispersion compensators having variable amount of dispersion compensation to compensate chromatic dispersion of each signal light output from the optical divider;

10 a data demodulator to demodulate a data carried by a signal light output from the first dispersion compensator;

an optical selfcorrelator to operate selfcorrelation of a signal light output from the second dispersion compensator; and

15 a controller to control on trial the second dispersion compensator to make selfcorrelation of the optical selfcorrelation larger and to control the first dispersion compensator according to the trial result.

20 6. The optical receiver of claim 5 wherein the data demodulator comprises a transmission error rate information calculator to calculate information indicating a transmission error rate of the optical transmission line; and

the controller controls the first dispersion compensator

25 to make the transmission error rate smaller according to the output from the transmission error rate information calculator .

7. The optical receiver of claim 6 wherein

30 the first dispersion compensator comprises a dispersion/dispersion slope compensator having variable amount of dispersion compensation and variable dispersion slope; and

the controller controls the dispersion slope of the dispersion/dispersion slope compensator to make the transmission error rate smaller.

- 5 8. An optical receiver comprising:
- a first optical divider to divide a signal light input from an optical transmission line into two portions;
- first and second dispersion compensators having variable amount of dispersion compensation to compensate chromatic dispersion of each signal light output from the first optical divider;
- a second optical divider to divide an output light from the first dispersion compensator into two portions;
- a data demodulator to demodulate a data carried by one portion of signal light output from the second optical divider;
- an optical selfcorrelator;
- an optical selector to supply an output light from the second dispersion compensator or the other portion of output light from the second optical divider to the optical selfcorrelator; and
- a controller to control on trial the second dispersion compensator to make selfcorrelation of the optical selfcorrelator larger on condition that the optical selector is controlled to supply the output signal light from the second dispersion compensator to the optical selfcorrelator, and to control the first dispersion compensator according to the trial result.

9. The optical receiver of claim 8 wherein
- 30 the controller, after setting the trial result to the first dispersion compensator, controls the first dispersion compensator to make selfcorrelation of the optical selfcorrelator larger on condition that the optical selector

is controlled to supply the output signal light from the first dispersion compensator to the optical selfcorrelator.

10. The optical receiver of claim 8 wherein

5       the data demodulator comprises a transmission error rate information calculator to calculate information indicating a transmission error rate of the optical transmission line; and  
          the controller controls the first dispersion compensator to make the transmission error rate smaller according to an  
10      output from the transmission error rate information calculator.

11. The optical receiver of claim 10 wherein

15       the first dispersion compensator comprises a dispersion/dispersion slope compensator having variable amount of dispersion compensation and variable dispersion slope are variable; and

          the controller controls the dispersion/dispersion slope compensator to make the transmission error rate smaller.

20 12. A method for controlling a dispersion compensator to compensate chromatic dispersion of a signal light input from an optical transmission line, the method comprising steps of:  
          operating selfcorrelation of the output signal light from the dispersion compensator; and

25       controlling the dispersion compensator to make the selfcorrelation larger.

13. The method of claim 12 further comprising a step of calculating information indicating a transmission error rate 30 of the optical transmission line out of the output signal light from the dispersion compensator wherein

          the controlling step controls the dispersion compensator to make the selfcorrelation larger and to make the transmission

error rate smaller.

14. The method of claim 13 wherein the controlling step controls the dispersion compensator to make the selfcorrelation larger and after that controls the dispersion compensator to make the transmission error rate smaller.

15. The method of claim 13 wherein the dispersion compensator comprises a dispersion/dispersion slope compensator having variable amount of dispersion compensation and variable dispersion slope; and

the controlling step controls the amount of dispersion compensation of the dispersion/dispersion slope compensator to make the selfcorrelation larger and controls the dispersion slope of the dispersion/dispersion slope compensator to make the transmission error rate smaller.

16. A method for controlling a first dispersion compensator to compensate chromatic dispersion of a signal light input from an optical transmission line, the method comprising steps of;

providing a second dispersion compensator having variable amount of dispersion compensation to compensate chromatic dispersion of a signal light input form the optical transmission line;

25 operating selfcorrelation of a signal light output from the second dispersion compensator;

trying the control of the second dispersion compensator to make the selfcorrelation larger; and

controlling the first dispersion compensator according 30 to the trial result from the trying step.

17. The method of claim 16 further comprising a step of calculating information indicating a transmission error rate

of the optical transmission line out of a signal light output from the first dispersion compensator wherein

the controlling step further comprises a step of controlling the first dispersion compensator to make the  
5 transmission error rate smaller.

18. The method of claim 17 wherein the first dispersion compensator comprises a dispersion/dispersion slope compensator having variable amount of dispersion compensation and variable dispersion slope; and

the controlling step controls the dispersion slope of the dispersion/dispersion slope compensator to make the transmission error rate smaller.

15 19. A method for controlling a first dispersion compensator to compensate chromatic dispersion of a signal light input from an optical transmission line, the method comprising steps of:

providing a second dispersion compensator having variable amount of dispersion compensation to compensate  
20 chromatic dispersion of a signal light input from the optical transmission line;

operating selfcorrelation of a signal light output from the second dispersion compensator and trying the control of the second dispersion compensator to make the selfcorrelation  
25 larger; and

setting the first dispersion compensator according to the trial result of the operating and trying step.

20. The method of claim 19 further comprising:

30 a step of calculating information indicating a transmission error rate of the optical transmission line out of the signal light output from the first dispersion compensator; and

a first control step of controlling the first dispersion compensator to make the transmission error rate smaller.

21. The method of claim 19 further comprising a second  
5 control step of operating selfcorrelation of the output signal light from the first dispersion compensator after the setting step and controlling the first dispersion compensator to make the selfcorrelation larger.

10 22. The method of claim 20 wherein the first dispersion comprises a dispersion/dispersion slope compensator having variable amount of dispersion compensation and variable dispersion slope; and

15 the first control step comprises a step of controlling the dispersion slope of the dispersion/dispersion slope compensator to make the transmission error rate smaller.